ABSTRACT OF THE DISCLOSURE

Corresponding to a target torque, the control device calculates a
target value of a feature based on at least one of the length of a long axis of a
current vector locus and the length of the short axis and further
5 superimposes a superimposed current on a drive current for the motor, the
superimposed current having a frequency different from the frequency of the
drive current.   Further, the control device detects an actual value of the
feature based on at least one of the length of a long axis of a current vector
locus of the superimposed current and the length of the short axis of the
10 same and finally detects a phase angle of the motor based on the target value
and the actual value for the feature.   The manipulation of a detecting phase
is performed by feedback of a feature obtained by the magnitude of the
superimposed current.   That is, when the actual feature is more than the
target value, the detecting phase is advanced.   Conversely, when the actual
15 feature is less than the target value, the detecting phase is delayed.